

Relating to the EU-SILC UK Operation 2006-2009

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# Final Quality Report

Office for National Statistics

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## Preface

According to article 16 of the Regulation (EC) no. 1177/2003 of the European Parliament and of the Council of 16 June 2003 concerning Community statistics on income and living conditions (EU-SILC), Member States and the Commission (Eurostat) will produce the following reports:

*Member States shall produce by the end of year N+2 (2011), final quality reports that cover both cross-sectional and longitudinal components in relation to the year of the survey N (2009).*

## Note on the UK EU-SILC Survey

In 2008 the Office for National Statistics (ONS) launched the Integrated Household Survey (IHS) for Great Britain. In the IHS a questionnaire is comprised of two sections: a suite of core IHS questions followed by individual survey modules. The General Household Survey (GHS) was chosen as a module of the IHS and in recognition the name was changed to the General Lifestyle Survey (GLF). This report provides quality information for EU-SILC which is collected as part of the General Lifestyle Survey questionnaire in 2009.

## Version Control

This version of the 2006-9 UK EU-SILC Final Quality Report relates to and is consistent with the indicators and microdata transmitted to Eurostat on the 2nd June 2011. Users should be aware that microdata available via Eurostat may not be consistent with the indicators if either have been recently revised, so should contact Eurostat for further information.

## Microdata and Indicator Revisions

There have been 4 versions of the 2006-9 UK EU-SILC longitudinal data sent to Eurostat as listed below.

Version	Date delivered to Eurostat	Revision summary
V1	31/3/2011	First version sent to Eurostat.
V2	9/05/2011	Second delivery sent including all changes to 06-09 cross-sectional datasets to date (NB All cross-sectional files were redelivered on 9 <sup>th</sup> May 2011. Revisions will be listed in the individual Quality Reports when these are updated). Cases with large differences in income across years investigated and corrected.
V3	17/05/2011	Personal data resent with minor corrections to the files due to failure of validation program.
V4	2/6/2011	One case removed as there was no OSM. Weights adjusted according to Eurostat instructions.

## 1. Common longitudinal European Union indicators

In 2009 the longitudinal UK EU-SILC data comprise a panel over four years 2006-2009 for the first time.

In order to estimate the percentage of panel-persons living at-risk-of-poverty, the at-risk-of-poverty threshold has to be recalculated for each year of the four years longitudinal rotation to remove bias due to a threshold, which was estimated for the cross-sectional population of each year from 2006 to 2009 instead of the longitudinal population.

Persistent at-risk-of-poverty occurs if a panel person is at-risk-of-poverty in the last wave of the four years panel (2009) and has been at-risk-of-poverty at least two times during the preceding waves. Table 1 shows possible combinations of being at-risk-of-poverty which are contained in the longitudinal indicator:

**Table 1: Types of at-persistent-risk-of-poverty**

2009	2008	2007	2006	Duration of at-risk-of-poverty (years)
At-risk	At-risk	At-risk	At-risk	4
At-risk	At-risk	At-risk	Not-at-risk	3
At-risk	At-risk	Not-at-risk	At-risk	3
At-risk	Not-at-risk	At-risk	At-risk	3

According to EU-SILC longitudinal dataset 8.0% of all persons of the population from 2006-2009 are at-persistent-risk-of-poverty.

**Table 2: Persistent at-risk-of-poverty rate by gender and age 2009**

At-risk-of-poverty			
Age	Sex	%	
Total	T	8.0	
	M	7.6	
	F	8.3	
0 - 17	T	10.9	
	18 - 64	T	6.2
		M	6.1
65+	F	6.4	
	T	11.3	
	M	10.0	
	F	12.4	

## **2. Accuracy**

Accuracy denotes the closeness of computations or estimates to the exact or true population values.

### **2.1 Sampling design**

#### **2.1.1 Type of sampling**

Data for EU-SILC UK 2009 are collected from two sources. First, data are collected by the Office for National Statistics (ONS), using the General Lifestyle Survey. Second, to ensure that EU-SILC is representative of the UK, a sample of approximately 300 households is selected by NISRA (Northern Ireland Statistics and Research Agency) using the Living Conditions Survey (LCS). This small additional sample represents the (approximately) 2% of the UK population that live in Northern Ireland. All of the data analysis and processing is undertaken by ONS.

EU-SILC UK aims to interview all adults aged 16 and over at every household at the sampled addresses. The sample is selected using a probability, stratified two-stage design.

#### **2.1.2 Sampling units (one stage, two stages)**

Households are sampled from the small users Postcode Address File (PAF). This is a list of all addresses maintained by the UK Post Office. The PAF files used on our sampling system are updated twice a year. The Postcode address file is ordered by postcode sector, which are similar in size to a UK electoral ward area. The postcode sectors are the Primary Sampling Units (PSU-1) for EU-SILC and the Secondary Sampling Units (PSU-2) are addresses within those sectors.

#### **2.1.3 Stratification and sub-stratification criteria**

Stratification involves the division of the population into sub-groups, or strata, from which independent samples are taken. This ensures that a representative sample is drawn with respect to the stratifiers. Stratification of a sample can lead to substantial improvements in the precision of the survey estimators provided that the strata are chosen such that members of the same strata are as similar as possible in respect of the characteristics of interest. The bigger the differences between strata, the greater the gain in the precision of the survey estimates.

Initially, GB postcode sectors are allocated to 30 major strata. These are based on the 10 Government Office Regions in England (sub-divided between the former Metropolitan and non-Metropolitan counties). In addition London is subdivided into quadrants (Northwest, Northeast, Southwest and Southeast) with each quadrant divided into inner and outer areas (Annex 1). Using a finer division of London generally improves the

precision associated with the estimates. There are five subdivisions in Scotland, two in Wales and one in Northern Ireland. There is an additional stratum for NI.

It should be noted that regions and strata do not exactly map onto each other. There are 30 strata in GB but 37 regions. Some strata contain cases from 2 or more regions and some regions contribute cases to more than one stratum.

Within each major stratum, postcode sectors were then stratified according to selected indicators taken from the 2001 Census. Sectors were initially ranked according to the proportion of households with no car, and then divided into three bands containing approximately the same number of households. Within each band, sectors were re-ranked according to the proportion of households with a household reference person in socio-economic groups 1 to 5 and 13 (Annex 2), and these bands were then sub-divided into three further bands of approximately equal size. Finally, within each of these bands, sectors were re-ranked according to the proportion of people who were pensioners.

Major strata were then divided into minor strata with equal numbers of addresses, the number of minor strata per major strata being proportionate to the size of the major stratum, so larger PSUs have more chance of being selected. In 2005 the frame was divided into 720 strata. In 2006, 588 of these were rolled forward to the next wave in the longitudinal design. There were 132 pseudo wave 4 strata which were replaced and an additional 96 strata added, giving 816 for 2006. In 2007, 648 of these were again rolled forward to the next wave in the longitudinal design. There were 168 pseudo wave 4 strata which were replaced and an additional 60 strata added, giving 876 for 2007. In 2008, 684 of these were rolled forward to the next wave in the longitudinal design. There were 192 pseudo wave 4 strata which were replaced and an additional 36 strata added, giving 912 for 2008. In 2009, 684 of these were rolled forward to the next wave in the longitudinal design. There were 228 pseudo wave 4 strata which were replaced, giving 912 for 2009.

#### **2.1.4 Sample size and allocation criteria**

Regulation 1177/2003 states that member states have to achieve a minimum effective sample size. For the UK and for the cross sectional component this is 7,500 households and 13,750 persons aged 16 and above. For the longitudinal component this is 5,750 households and 10,500 persons aged 16 and above.

The sample design for UK EU-SILC was based on the assumption that a design effect of 1.25 would be achieved under the design. In 2006, 13,857 addresses were selected for survey, yielding an achieved sample of 9,902 eligible households. Within these households 23,365 people were residents of which 18,563 were interviewed and aged at least 16 years.

In 2007, 13,478 addresses were selected for survey, yielding a sample of 9,275 eligible households. Within these households 21,942 people were residents of whom 17,484 were eligible for a personal interview (aged at least 16 years of age).

In 2008, 13,051 addresses were selected for survey, yielding a sample of 8,936 eligible households. Within these households 21,043 people were residents of whom 16,825 were eligible for a personal interview (aged at least 16 years of age).

In 2009, 12,530 addresses were selected for survey, yielding a sample of 8,365 eligible households. Within these households 19,415 people were residents of whom 15,646 were eligible for a personal interview (aged at least 16 years of age). The design effect for 2008 was 1.15. The design effect for 2009 is not yet available, however if we use the 2008 figure, dividing the actual sample size of 8,365 households by the 2008 figure yields the effective sample size of the EU-SILC operation 2009 as 7,274 households and 13,605 persons aged 16+ respectively.

**Table 3: Households and persons in the longitudinal component**

	Longitudinal Sample 2006-2009				
	2006	2007	2008	2009	Total
Used Addresses	5,447	8,819	10,993	7,244	32,503
Addresses successfully contacted	4,911	7,906	10,149	7,244	30,210
Interview accepted for database	3,271	5,525	7,192	5,456	21,444
Persons	7,654	13,200	17,236	13,005	51,095
Personal interviews	6,080	10,405	13,552	10,255	40,292

### 2.1.5 Sample selection schemes

EU-SILC GB uses a two-stage sampling scheme:

1. Selection of a Primary Sampling Units (PSUs) utilising a probability proportional to size sampling scheme, and selecting one PSU per stratum with a systematic selection procedure based on a random starting point.
2. Systematic random sampling of 23 addresses within a PSU.

The sample design in Northern Ireland (NI) is a simple random sample.

**Table 4: Sample size, addresses and household interviews**

	Longitudinal Sample 2006-2009																			
	2006		2007						2008						2009					
	n	%	Total households (db110>0)		Follow-up households (db110=1,2,11)		Split households (db110=8)		Total households (db110>0)		Follow-up households (db110=1,2,11)		Split households (db110=8)		Total households (db110>0)		Follow-up households (db110=1,2,11)		Split households (db110=8)	
Used addresses	5447	100.0	8819	100.0	3265	100.0	86	100.0	10993	100.0	5497	100.0	50	100.0	7244	100.0	7163	100.0	52	100.0
Addresses existent	4975	91.3	7695	90.3	3265	100.0	86	100.0	10161	92.4	5497	100.0	50	100.0	7244	100.0	7163	100.0	52	100.0
Add. non-existent	472	8.7	854	9.7	0	0.0	0	0.0	832	7.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Gross sample	4975	100.0	7695	100.0	3265	100.0	86	100.0	10161	100.0	5497	100.0	50	100.0	7244	100.0	7163	100.0	52	100.0
Add. successfully contacted	4911	98.7	7906	99.3	3265	100.0	34	39.5	10149	99.9	5947	100.0	50	100.0	7244	100.0	7163	100.0	52	100.0
Add. not contacted	64	1.3	59	0.7	0	0.0	52	60.5	12	0.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Successfully contacted add.	4911	100.0	7906	100.0	3265	100.0	34	100.0	10149	100.0	5947	100.0	50	100.0	7244	100.0	7163	100.0	52	100.0
Hhld questionnaire completed	3271	66.6	5525	69.9	2296	70.3	23	67.6	7192	70.9	4140	75.3	50	100.0	5456	75.3	5404	75.4	52	100.0
DB130=11																				
Refusal	1518	30.9	1557	19.7	336	10.3	7	20.6	2173	21.4	771	14.0	0	0.0	912	12.6	912	12.7	0	0.0
DB130=21,22																				
Unable to respond	107	2.2	214	2.7	49	1.5	0	0.0	271	2.7	111	2.0	0	0.0	104	1.4	104	1.5	0	0.0
DB130=23																				
Other reasons	15	0.3	308	3.9	288	8.8	4	11.8	180	1.8	170	3.1	0	0.0	260	3.6	260	3.6	0	0.0
DB130=24																				
DB130 Missing	0	0.0	302	3.8	296	9.1	0	0.0	333	3.3	305	5.5	0	0.0	512	7.1	483	6.7	0	0.0
Hhld questionnaire completed	3271	100.0	5525	100.0	2296	100.0	23	100.0	7192	100.0	4140	100.0	50	100.0	5456	100.0	5404	100.0	52	100.0
Interview accepted	3271	100.0	5525	100.0	2296	100.0	23	100.0	7192	100.0	4140	100.0	50	100.0	5456	100.0	5404	100.0	52	100.0
DB135=1																				
Interview rejected	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
DB135=2																				

## 2.1.6 Sample distribution over time

Household interviews for EU-SILC UK are spread evenly throughout the calendar year. Typically a small number of interviews will be completed in January of the following year, however in the 2006 survey, due to a shortage of interviewers, a larger number of interviews and re-issues remained unallocated, and so the field period was extended until April 2007.

**Table 5: Sample distribution over time**

	Year of Survey			
	2006	2007	2008	2009
January	261	361	540	416
February	292	429	574	454
March	277	461	587	467
April	243	511	617	448
May	290	463	587	473
June	288	492	655	496
July	238	443	593	476
August	291	512	582	451
September	281	468	627	460
October	263	496	640	438
November	293	494	620	480
December	224	326	493	342
January	12*	64 <sup>#</sup>	77 <sup>&amp;</sup>	48 <sup>b</sup>
February	9*	5 <sup>#</sup>		7 <sup>s</sup>
March	4*			
<b>Total</b>	3271	5525	7192	5456

\* data collected in 2007

# data collected in 2008

& data collected in 2009

\$ data collected in 2010

## 2.1.7 Renewal of sample: rotational groups

In the UK, 2005 was the first year for the EU-SILC survey. To accommodate EU-SILC, the General Household Survey (GHS) adopted a new sample design in line with Eurostat requirements, changing from a cross-sectional to a longitudinal format.

The sample design follows a four-year sample rotation in which households remain in the sample for four years (waves) with one quarter of the sample being replaced each year. Each quarter of the sample is known as a replication, and each replication is representative of the target population. Figure 1 illustrates how the design operates.

The system is fully established from 2008 (year 4 onwards). The sample from 2008 onwards, for any one year, consists of four replications which have been in the survey for 1, 2, 3 or 4 years.

**Figure 1: Renewal of sample: Rotational groups**

Sample replication	Year 1 (2005)	Year 2 (2006)	Year 3 (2007)	Year 4 (2008)	Year 5 (2009)	Year 6 (2010)
1	1st					
2	1st	2nd				
3	1st	2nd	3rd			
4	1st	2nd	3rd	4th		
5		1st	2nd	3rd	4th	
6			1st	2nd	3rd	4th
7				1st	2nd	3rd
8					1st	2nd
9						1st

**Table 6: Addresses and completed interviews by rotational group**

	2006		2007		2008		2009	
	Used addresses	Completed and accepted interviews						
R1	5447	3271	3357	2319	2339	1874	1889	1511
R2	-	-	5462	3206	3236	2316	2343	1817
R3	-	-	-	-	5418	3002	3012	2128
missing	-	2176	-	3294	-	3801	-	1788
Total	5447	5447	8819	8819	10993	10993	7244	7244

## 2.1.8 Weights

This section describes the methods used to calculate weights for the UK EU-SILC 2009 survey. The methods are broadly consistent with those recommended by Eurostat. The longitudinal survey weights are derived through combining the appropriate longitudinal base weights for each panel, according to the number of panels used to create each of the output datasets. The longitudinal base weights essentially are attrition-adjusted, carried-forward Wave 1 cross-sectional weights for a given panel.

Adjustments, in general, are made to improve the accuracy of data, meaning the closeness of survey-based estimations or computations to the 'true' values. These adjustments are made at Wave 1 through model-based non response adjustments and calibration. For subsequent waves the inverse of the response propensities is used as an attrition weight.

### 2.1.8.1 The Horvitz-Thompson design weight

Addresses are selected for the first wave of each panel using a random probability design, the detail of which is outlined in the preceding sections of this report. The design weight for a household is calculated as the inverse of the inclusion probability for the samples address e.g a standard Horvitz-Thompson (HT) estimator. The HT estimator is then adjusted by a two-step procedure to produce the Wave 1 cross-sectional weight.

## 2.1.8.2 Initial non-response adjustments

Non-response to the surveys (General Lifestyle Survey and Living Costs and Food Survey) used to produce the EU-SILC data can introduce bias into the estimator. For the UK data, an attempt is made to correct for this bias through weighting households based on their estimated propensity to respond. For EU-SILC, non-response can occur at any given wave.

A non-response model exists for the GLF which comprises a number of adjustment classes. These classes were constructed by linking households selected for the 2001 General Household Survey (the earlier version of the GLF) to the 2001 Census. The Census is mandatory in the UK and so both responders and non-responders to the GLF can be matched to Census records. Response classes were formed based on households' propensity to respond to the survey, condition on certain combinations of characteristics available in both the Census and the survey. The reciprocal of the response propensity is used as the non-response weight.

## 2.1.8.3 Calibration to population totals

Calibration is used in the weighting procedure both to improve precision and to ensure consistency with known population totals. The EU-SILC sample is based on the population of private households, which means that the population totals used in the weighting need to be those created from counts of people living in private households.

At the time the weights were being constructed the most appropriate version of the population totals available for weighting were those produced for the British Labour Force Survey (LFS). The LFS derives household population estimates by excluding residents of institutions from population projections based on mid-year estimates. However, certain groups in institutions are included in the population totals e.g. nurses in nursing homes.

The population information and EU-SILC UK data were grouped into twelve age by sex categories and into six regional categories to form weighting classes. The initial non-response adjusted HT weight is adjusted, using Stats Canada's Generalized Estimation System (GES), so that the final weights ensure that the weighted totals for the above demographic categories match the population totals.

### ***Age-group by sex***

0-4	Males and Females		
5-15	Males and Females		
16-24	Males	16-24	Females
25-44	Males	25-44	Females
45-64	Males	45-64	Females
65-74	Males	65-74	Females
75+	Males	75+	Females

### ***Regions***

Metropolitan  
Non-metropolitan  
London  
South East

Wales  
 Scotland  
 Northern Ireland

#### 2.1.8.4 The longitudinal base-weight

The longitudinal base-weight is the foundation block for the creation of each of the two, three and four year panel final longitudinal weights, RB062, RB063 and RB064 respectively. Necessarily, these weights are only given for the last year (e.g. 2009).

For a given rotational panel, the longitudinal base weight (RB060) at Wave 1 corresponds to the initial final cross-sectional calibration described immediately above e.g. the design weight adjusted for non-response and calibrated to the UK population totals. It is then adjusted for attrition at each subsequent wave, as described below.

#### 2.1.8.5 Non-response adjustments (attrition in subsequent waves)

Attrition is a form of non-response found on longitudinal surveys between waves. The 2009 EU-SILC is the survey's fifth year in the UK; this meant that approximately three-quarters of sampled households had been surveyed in 2008. As these sampled households had previously participated in the survey, details of respondents and non-respondents were linked back to their corresponding information at the previous wave. Logistic regression was used to model the likelihood of response in the current wave against the characteristics of households at their interview in the previous wave. A variety of household variables such as household composition, region, accommodation type and long standing illness were tested for inclusion. Characteristics determined as significant by the logistic regression model (at the five per cent significance level) were used to weight for this attrition. The variables reaching significance are listed in Table 7 below.

**Table 7: Variables included in the logistic regression model of household attrition in 2009**

<b>Variable</b>
Age of household reference person
Any qualification (any resident)
Current wave
Drinking amount of the household reference person
Dwelling type
Ethnicity of household reference person
Government Office Region
Household composition
Number of calls made to the household to arrange the interview
Number of partial interviews in household
Number of people in household who smoke nowadays
Number of people in the household who checked their payslip during interview
Number of people in the household who refused or answered 'don't know' to a known sensitive question
Tenure
When household reference person arrived in UK

### **2.1.8.6 Adjustments to external data (longitudinal population)**

For any given rotational panel, we define the longitudinal population at any calendar time as the initial private household population at the time the sample was drawn minus those people who have moved out of the population between sampling and the interview time. We therefore construct our estimate of the longitudinal population initially using the population totals at the first wave. We then subtract number of deaths and out-migrations between sampling and the survey to estimate the longitudinal population.

Unfortunately we do not have robust estimates of institutionalisation – the other major potential source of losses to the private household population, so we do not adjust the longitudinal population for such loss. Consequently, we expect our estimates of the longitudinal population to be on the high.

For example, 2007 wave 2 would use the 2006 mid year population estimates minus deaths and emigrants in 2007. 2008 wave 3 would also use the 2006 population estimate but would remove the 2008 deaths and emigrants figures as well as the 2007 deaths and emigrant figures.

The deaths estimate for the UK is calculated using the ‘Ministry of Justice Annual Report of Coroners Statistics in England and Wales. The number of emigrants for the UK is taken from the published ‘ONS International Migration Estimates’.

### **2.1.8.7 Final longitudinal weight (subsequent waves)**

The final longitudinal weight takes the trimmed and population adjusted weight described above and averages over the relevant number of panels (e.g. three panels for the two-wave longitudinal dataset to create RB062. A number of special circumstances are worth noting.

In general, co-residents joining sample households receive a zero longitudinal base-weight. Immigrants are assigned a non-zero base weight value calculated as the average weight of existing household members and newborns receive their mother’s weight.

RB060 is produced from the base weights and is scaled so that the sum of the weights over those individuals in scope for the longitudinal dataset equals the estimated size of the relevant longitudinal population.

For the longitudinal weights (RB062, RB063, RB064) persons that have moved in from outside the sample, are newly born, have moved out or dies are given a zero weight.

### **2.1.8.8 Final household cross-sectional weight**

The final cross sectional weight (DB090) is calculated from the base weights.

### **2.1.9 Substitutions**

In 2009, no substitutions were made.

## **2.2 Sampling errors**

The following tables present the means, number of observations and standard errors for the key income variables for the cross-sectional component in 2009 and for each wave of the longitudinal component 2006-2009. The means are calculated across all households, including those who have not recorded any income against the component.

Please note that tables 13-17 have not been updated at the time of sending this document. This information will be updated in January 2012.

**Table 8: Mean, Total Number of Observations and Standard Errors for Income Components (weighted) - 2009 Cross-Sectional**

Income Component	Mean	Unweighted Number of Observations		Standard Error
		Before Imputation	After Imputation	
<b>Total household income variables</b>				
Total household gross income	36,001	5,561	8,365	468.2
Total disposable household income	27,407	5,603	8,365	300.7
Total disposable household income before social transfers other than old-age and survivor benefits	24,596	6,081	8,365	326.5
Total disposable household income before social transfers including old-age and survivors' benefits	19,684	6,725	8,365	311.3
<b>Gross income components at household level</b>				
Income from rental of a property or land	332	8,314	8,365	3.5
Family/child related allowances	389	8,037	8,365	39.1
Social exclusion not elsewhere classified	875	8,168	8,365	18.0
Housing allowances	407	8,196	8,365	18.6
Regular inter-household cash transfer received	125	8,354	8,365	16.7
Interest, dividends, etc.	704	7,741	8,365	55.0
Interest repayments on mortgage	1,485	8,214	8,365	35.9
Income received by people aged under 16	8	8,365	8,365	1.9
Regular taxes on wealth	1,032	8,357	8,365	9.4
Regular inter-household cash transfer paid	163	8,349	8,365	15.2
Tax on income and social contributions	7,400	6,863	8,365	169.6
<b>Gross income components at personal level</b>				
Employee cash or near cash income	12,165	14,643	15,646	208.3
Non-cash employee income	161	15,605	15,646	9.3
Employer's social insurance contribution	227	15,419	15,646	11.7
Contributions to individual private pension plans	202	15,282	15,646	10.0
Cash benefits or losses from self-employment	1,741	15,397	15,646	119.5
Value of goods produced for own consumption	0	15,646	15,646	0.0
Pension from individual private plans	157	15,455	15,646	13.3
Unemployment benefits	66	15,624	15,646	5.1
Old-age benefits	2,720	14,324	15,646	34.9
Survivor's benefits	25	15,628	15,646	4.4
Sickness benefits	137	15,561	15,646	7.3
Disability benefits	141	15,484	15,646	7.3
Education-related allowances	59	15,623	15,646	7.9
Gross monthly earnings for employees	1,707	14,740	15,646	24.7

**Table 9: Mean, Total Number of Observations and Standard Errors for Income Components 2006 part of longitudinal (weighted)**

Income Component	Mean	Unweighted Number of Observations		Standard Error
		Before Imputation	After Imputation	
<b>Total household income variables</b>				
Total household gross income	32,359	1,906	3,271	
Total disposable household income	24,318	1,624	3,271	
Total disposable household income before social transfers other than old-age and survivor benefits	22,074	1,813	3,271	
Total disposable household income before social transfers including old-age and survivors' benefits	17,846	1,960	3,271	
<b>Gross income components at household level</b>				
Income from rental of a property or land	222	3,240	3,271	
Family/child related allowances	631	3,164	3,271	
Social exclusion not elsewhere classified	374	3,203	3,271	
Housing allowances	451	3,215	3,271	
Regular inter-household cash transfer received	101	3,264	3,271	
Interest, dividends, etc.	791	2,660	3,271	
Interest repayments on mortgage	1,676	3,270	3,271	
Income received by people aged under 16	10	3,270	3,271	
Regular taxes on wealth	892	3,021	3,271	
Regular inter-household cash transfer paid	175	3,258	3,271	
Tax on income and social contributions	6,974	2,288	3,271	
<b>Gross income components at personal level</b>				
Employee cash or near cash income	11,365	5,274	6,080	
Non-cash employee income	204	5,506	6,080	
Contributions to individual private pension plans	156	6,041	6,080	
Cash benefits or losses from self-employment	1,409	5,974	6,080	
Value of goods produced for own consumption	0	6,080	6,080	
Pension from individual private plans	129	6,022	6,080	
Unemployment benefits	49	6,065	6,080	
Old-age benefits	2,415	5,597	6,080	
Survivor's benefits	40	6,069	6,080	
Sickness benefits	146	6,023	6,080	
Disability benefits	87	6,038	6,080	
Education-related allowances	45	6,072	6,080	

**Table 10: Mean, Total Number of Observations (before and after imputation) and Standard Errors for Income Components 2007 part of longitudinal (weighted)**

Income Component	Mean	Unweighted Number of Observations		Standard Error
		Before Imputation	After Imputation	
<b>Total household income variables</b>				
Total household gross income	36,136	3,259	5,525	
Total disposable household income	27,190	3,232	5,525	
Total disposable household income before social transfers other than old-age and survivor benefits	24,834	3,496	5,525	
Total disposable household income before social transfers including old-age and survivors' benefits	20,045	3,876	5,525	
<b>Gross income components at household level</b>				
Income from rental of a property or land	350	5,481	5,525	
Family/child related allowances	687	5,252	5,525	
Social exclusion not elsewhere classified	368	5,399	5,525	
Housing allowances	455	5,412	5,525	
Regular inter-household cash transfer received	110	5,510	5,525	
Interest, dividends, etc.	1235	4,679	5,525	
Interest repayments on mortgage	2,160	5,522	5,525	
Income received by people aged under 16	11	5,523	5,525	
Regular taxes on wealth	964	5,198	5,525	
Regular inter-household cash transfer paid	168	5,503	5,525	
Tax on income and social contributions	7,813	3,990	5,525	
<b>Gross income components at personal level</b>				
Employee cash or near cash income	12,359	9,222	10,405	
Non-cash employee income	202	10,360	10,405	
Contributions to individual private pension plans	178	10,362	10,405	
Cash benefits or losses from self-employment	1,649	10,223	10,405	
Value of goods produced for own consumption	0	10,405	10,405	
Pension from individual private plans	125	10,276	10,405	
Unemployment benefits	41	10,382	10,405	
Old-age benefits	2,699	9,543	10,405	
Survivor's benefits	47	10,393	10,405	
Sickness benefits	138	10,325	10,405	
Disability benefits	124	10,302	10,405	
Education-related allowances	44	10,384	10,405	

**Table 11: Mean, Total Number of Observations (before and after imputation) and Standard Errors for Income Components 2008 part of longitudinal (weighted)**

Income Component	Mean	Unweighted Number of Observations		Standard Error
		Before Imputation	After Imputation	
<b>Total household income variables</b>				
Total household gross income	37,993	4,278	7,192	
Total disposable household income	28,377	4,563	7,192	
Total disposable household income before social transfers other than old-age and survivor benefits	25,948	4,706	7,192	
Total disposable household income before social transfers including old-age and survivors' benefits	20,972	5,038	7,192	
<b>Gross income components at household level</b>				
Income from rental of a property or land	378	7,097	7,192	
Family/child related allowances	721	6,948	7,192	
Social exclusion not elsewhere classified	328	7,046	7,192	
Housing allowances	464	7,172	7,192	
Regular inter-household cash transfer received	117	7,171	7,192	
Interest, dividends, etc.	1,072	6,122	7,192	
Interest repayments on mortgage	1,929	7,160	7,192	
Income received by people aged under 16	16	7,186	7,192	
Regular taxes on wealth	1020	6,565	7,192	
Regular inter-household cash transfer paid	205	7,125	7,192	
Tax on income and social contributions	8,391	4,941	7,192	
<b>Gross income components at personal level</b>				
Employee cash or near cash income	13,117	11,863	13,552	
Non-cash employee income	202	13,550	13,552	
Contributions to individual private pension plans	265	13,398	13,552	
Cash benefits or losses from self-employment	2,081	13,181	13,552	
Value of goods produced for own consumption	0	13,552	13,552	
Pension from individual private plans	195	13,351	13,552	
Unemployment benefits	49	13,535	13,552	
Old-age benefits	2,821	12,419	13,552	
Survivor's benefits	24	13,534	13,552	
Sickness benefits	142	13,470	13,552	
Disability benefits	125	13,432	13,552	
Education-related allowances	66	13,506	13,552	

**Table 12: Mean, Total Number of Observations (before and after imputation) and Standard Errors for Income Components 2009 part of longitudinal (weighted)**

Income Component	Mean	Unweighted Number of Observations		Standard Error
		Before Imputation	After Imputation	
<b>Total household income variables</b>				
Total household gross income	36,089	3,751	5,456	
Total disposable household income	27,440	3,800	5,456	
Total disposable household income before social transfers other than old-age and survivor benefits	24,787	4,080	5,456	
Total disposable household income before social transfers including old-age and survivors' benefits	19,235	4,498	5,456	
<b>Gross income components at household level</b>				
Income from rental of a property or land	369	5,427	5,456	
Family/child related allowances	844	5,269	5,456	
Social exclusion not elsewhere classified	379	5,338	5,456	
Housing allowances	524	5,361	5,456	
Regular inter-household cash transfer received	105	5,451	5,456	
Interest, dividends, etc.	840	5,052	5,456	
Interest repayments on mortgage	1,490	5,351	5,456	
Income received by people aged under 16	9	5,456	5,456	
Regular taxes on wealth	1,058	5,009	5,456	
Regular inter-household cash transfer paid	168	5,442	5,456	
Tax on income and social contributions	7,423	4,540	5,456	
<b>Gross income components at personal level</b>				
Employee cash or near cash income	12,425	9,705	10,255	
Non-cash employee income	172	10,233	10,255	
Contributions to individual private pension plans	222	10,000	10,255	
Cash benefits or losses from self-employment	1,762	10,118	10,255	
Value of goods produced for own consumption	0	10,255	10,255	
Pension from individual private plans	174	10,138	10,255	
Unemployment benefits	58	10,243	10,255	
Old-age benefits	3,136	9,416	10,255	
Survivor's benefits	30	10,243	10,255	
Sickness benefits	141	10,202	10,255	
Disability benefits	139	10,161	10,255	
Education-related allowances	50	10,243	10,255	

**Table 13: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2006 (weighted R1)**

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean %
		Before Imputation	After imputation		
<i>By household size</i>					
1 household member		To be updated			
2 household members					
3 household members					
4 and more household members					
<i>By age groups</i>					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
<i>By sex</i>					
Male					
Female					
Total					

**Table 14: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2007 (weighted R1, R2)**

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean %
		Before Imputation	After imputation		
<i>By household size</i>					
1 household member		To be updated			
2 household members					
3 household members					
4 and more household members					
<i>By age groups</i>					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
<i>By sex</i>					
Male					
Female					

**Table 15: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2008 (weighted R1, R2 & R3)**

Equivalised disposable income	Mean	Number of observations Before Imputation	Number of observations After imputation	Standard error	S.E./Mean %
<i>By household size</i>					
1 household member		To be updated			
2 household members					
3 household members					
4 and more household members					
<i>By age groups</i>					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
<i>By sex</i>					
Male					
Female					

**Table 16: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2009 (weighted R1, R2 & R3)**

Equivalised disposable income	Mean	Number of observations Before Imputation	Number of observations After imputation	Standard error	S.E./Mean %
<i>By household size</i>					
1 household member		To be updated			
2 household members					
3 household members					
4 and more household members					
<i>By age groups</i>					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
<i>By sex</i>					
Male					
Female					

**Table 17: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income for the cross-sectional component of 2009 (weighted)**

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean %
		Before Imputation	After imputation		
<i>By household size</i>					
		To be updated			
1 household member					
2 household members					
3 household members					
4 and more household members					
<i>By age groups</i>					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
<i>By sex</i>					
Male					
Female					

## 2.3 Non-sampling errors

Survey results are subject to various sources of error. The total error in a survey estimate is the difference between the estimate derived from the sample data collected and the true value for the population.

### 2.3.1 Sampling frame and coverage errors

The target population of EU-SILC UK is all private households and their current members at the time of data collection. Persons living in collective households and in institutions are excluded from the target population.

The sampling frame for the first wave is the Small Users file of the Postcode Address File (PAF). This is an up to date list of all addresses maintained by the UK Post Office. For the GLF (and therefore EU-SILC) all Scottish offshore islands and the Isles of Scilly are excluded from the frame because of excessive interview travel costs. The impact of such coverage error on UK EU-SILC is minimal.

### 2.3.2 Measurement and processing errors

#### 2.3.2.1 Measurement errors

Substantial efforts have been made to avoid measurement errors, for example, through extensive interviewer training and thorough questionnaire testing. With regards

interviewer training, face-to-face and telephone interviewers who work on EU-SILC UK are recruited only after careful selection procedures after which they take part in an initial training course. Before working on EU-SILC they attend a briefing and new recruits are always supervised either by being accompanied in the field by a Field Manager or monitored by a Telephone Interviewing Unit supervisor (TIUs). All interviewers who continue to work on EU-SILC are observed regularly in their work.

### **2.3.2.2 Processing errors**

Data collection is carried out by face-to-face interviewers using Computer Assisted Personal Interviewing (CAPI) on laptop computers. Blaise software (developed by Statistics Netherlands) is used, which is an integrated system for survey processing. The use of Blaise enables a reduction in processing-errors as data can be “checked” as it is entered by interviewers. For example, income data are “checked” at the point of collection to make sure that Net values are not greater than Gross values for an individual. Data are also rotated forward from the previous wave for certain questions, including personal information and labour variables. This allows the interviewer to query and correct any inconsistencies between waves.

Data are converted from Blaise to SPSS and are edited using this software. At this stage there is further checking for the consistency and plausibility of data. For example, comparisons are made with the income data recorded at the previous wave to check for consistency.

### **2.3.3 Non-response errors**

There are two main types of non-response errors - unit non-response and item non-response.

In strictly controlled circumstances, interviewers are allowed to conduct a proxy interview with a close household member to reduce unit non-response errors. Proxy interviews are only used where it has proved impossible, despite repeated calls, to contact a particular member of a household in person. In these cases, some questions are omitted, for example those which are more subjective such as those relating to health.

Further effort is directed towards reducing item non-response by converting these proxy interviews to full interviews. Attempts are made to contact the household member, who was unavailable during the initial face-to-face interview, and ask them the questions that were omitted from the proxy interview. It was established through extensive research that the most efficient way of re-contacting these respondents was by employing Telephone Unit (TIU) interviewers who could contact a widely dispersed population more efficiently than would be possible by conducting face-to-face interviews.

A problem specific to the UK concerns missing income data for some respondents. In the 2005 and 2006 surveys and for the first 3 months of the 2007 survey, respondents were allowed to refuse to answer all income questions. As such, information for these respondents is missing (approximately 60 individuals in 2007). In addition, proxy respondents are not asked any income questions, apart from one question relating to ‘total personal disposable income’ (this has also been rectified, since November 2007 proxy respondents have been asked to provide full-income information).

As a consequence of this, for the survey years 2005, 2006 & 2007 there are a relatively large number of individuals for whom income information has been wholly imputed. In the cross-sectional 2005 dataset, income information was wholly imputed for 11% of individual respondents, and in 2006 the corresponding rate was 13%.

### 2.3.3.1 Achieved sample size

**Table 18: Sample size and accepted interviews by year and rotational group**

		2006	2007	2008	2009	Total
Accepted household interviews	R1	5,447	3,357	2,339	1,889	13,032
	R2	-	5,462	3,236	2,343	11,041
	R3	-	-	5,418	3,012	8,430
<i>Personal interview accepted</i>						
Number of persons aged 16 and above	R1	6,080	4,338	3,517	2,849	16,784
	R2	-	6,067	4,382	3,390	13,839
	R3	-	-	5,653	4,016	9,669
Sample persons	R1	6,080	4,246	3,356	2,642	16,324
	R2	-	6,067	4,264	3,205	13,536
	R3	-	-	-	3,991	3,991
Co-residents	R1	-	92	161	207	460
	R2	-	-	118	185	303
	R3	-	-	-	94	94

### 2.3.3.2 Unit non-response

**Table 19: Indicators on unit non-response by rotational group (2006)**

	R1	Total
Addresses successfully contacted	5,447	5,447
Valid addresses selected	5,447	5,447
Ra - address contact rate	100.0%	100.0%
Household interviews completed	5,447	5,447
Eligible households	5,447	5,447
Rh - proportion of completed interviews	100.0%	100.0%
NRh - household non-response rate	0.0%	0.0%
Person interviews completed	6,080	6,080
Number of eligible individuals	6,080	6,080
Rp - proportion of completed interviews	100.0%	100.0%
*NRp – overall individual non-response rates $= (1 - (Ra * Rh * Rp)) / 10000$	100.0%	100.0%

**Table 20: Household response rates - Comparison of results codes between wave 2 2007 and wave 1 2006 (R1)**

Sample outcome in wave 1 – 2006		Sample outcome in wave 2 - 2007											Total
		DB130=11		DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	
		DB135 = 1	DB135 = 2										
DB130=11	DB135 = 1	3,271	0	0	0	49	288	336	0	4	0	0	3,948
	DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	3,271	0	0	0	49	288	336	0	4	0	0	3,948
<b>New household in wave 2 -2007</b>													
2007	DB110=8	0	0	0	0	0	0	0	0	NA	NA	0	0
	DB110=9	0	0	0	0	0	0	0	0	NA	NA	0	0
<b>Total</b>		6,542	0	0	0	98	576	672	0	8	0	0	7,896
		A	B	C	D	E	F	G	H	I	J	K	T

Wave response rate = **0.829**  
 Refusal rate = **0.085**  
 No-contacted and others = **0.073**  
 Longitudinal follow-up rate = **0.914**  
 Follow-up ratio = **0.914**  
 Achieved sample size ratio = **0.702**

**Table 21: Household response rates - Comparison of results codes between wave 3 2008 and wave 2 2007 (R1)**

Sample outcome in wave 2 - 2007		Sample outcome in wave 3 - 2008											Total
		DB130=11		DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	
		DB135 = 1	DB135 = 2										
DB130=11	DB135 = 1	1,846	0	0	0	46	61	245	0	13	0	0	2,211
	DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	1,846	0	0	0	46	61	245	0	13	0	0	2,211
DB120 = 22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=23	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=24	NH	0	0	0	0	0	0	0	0	0	0	0	0
<b>New household in wave 3 -2008</b>													
<b>2008</b>	DB110=8	0	0	0	0	0	0	0	0	NA	NA	0	0
	DB110=9	0	0	0	0	0	0	0	0	NA	NA	0	0
	<b>Total</b>	3,692	0	0	0	92	122	490	0	NA	NA	0	4,422

Wave response rate = **0.835**  
 Refusal rate = **0.111**  
 No-contacted and others = **0.028**  
 Longitudinal follow-up rate = **0.883**  
 Follow-up ratio = **0.883**  
 Achieved sample size ratio = 0.804

**Table 22: Household response rates - Comparison of results codes between wave 4 2008 and wave 3 2007 (R1)**

Sample outcome in wave 3 - 2007		Sample outcome in wave 4 - 2008											Total
		DB130=11		DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	
		DB135 = 1	DB135 = 2										
DB130=11	DB135 = 1	1,478	0	0	0	24	47	182	0	10	0	0	1,741
	DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	<b>Total</b>	1,478	0	0	0	24	47	182	0	10	0	0	1,741
DB120 = 22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=23	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=24	NH	0	0	0	0	0	0	0	0	0	0	0	0
<b>New household in wave 4 -2008</b>													
<b>2008</b>	DB110=8	0	0	0	0	0	0	0	0	NA	NA	0	0
	DB110=9	0	0	0	0	0	0	0	0	NA	NA	0	0
	<b>Total</b>	2,956	0	0	0	48	94	364	0	NA	NA	0	3,482

Wave response rate = **0.849**  
 Refusal rate = **0.105**  
 No-contacted and others = **0.027**  
 Longitudinal follow-up rate = **0.890**  
 Follow-up ratio = **0.890**  
 Achieved sample size ratio = 0.801

**Table 23: Person Interview outcome in wave 2 (R1)**

2007

		RB250=11,12,13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHinc1 DB110=3-6	HHinc2 DB110=7	Pn RB110=6 or RB120=2,3	P1 RB110=4 or -1	Total
Sample persons from previous wave													
Row													
1	RB110=1-2	4,129	0	0	0	0	0	0	0	0	0	0	4,153
2	RB110=6												11
3	RB110=-1												0
4	RB120=2												3
5	RB120=3												12
6	RB120=4												35
7	DB135=2,-1 or DB110=7 or DB120=21-23,-1 or DB130=21-24,-1												0
8	DB110=3-6												0
New sample persons													
9	Reached age 16	93	0	0	0	0	0	0	0	0	0	0	93
10	Sample additions	0	0	0	0	0	0	0					0
Non-sample persons 16+													
11	From Wave 1 -2006	0	0	0	0	0	0	0	0	0	0	0	0
	Not from Wave 1- 2006	0	0	0	0	0	0	0	0	0	0	0	0
Sample persons from sample not forwarded from last wave (excluding died or not eligible according to tracing rules)													
13	From 2006												0
Sum of rows:													
	1,3,6,7,9,10	4,222	0	0	0	0	0	0	0	0	0	0	4,281
	1,3,6,7,9,10,13	4,222	0	0	0	0	0	0	0	0	0	0	4,281
	1,3,6,7,9,10,11	4,222	0	0	0	0	0	0	0	0	0	0	4,281

Wave response rate of sample persons =	0.986	Achieved sample size ratio for sample persons =	0.990
Wave response rate of co-residents =	1.000	Achieved sample size ratio for sample persons and co-residents =	0.990
Longitudinal follow-up rate =	0.986	Achieved sample size ratio for co-residents selected the first wave =	-
Rate (RB250=21) =	0.000	Response rate for non-sample persons =	-
Rate (RB250=22) =	0.000		
Rate (RB250=23) =	0.000		
Rate (RB250=31) =	0.000		
Rate (RB250=32) =	0.000		
Rate (RB250=33) =	0.000		

**Table 24: Person Interview outcome in wave 3 (R1)**

		2008											
		RB250=11,12,13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHinc1	HHinc2	Pn	P1	Total
Sample persons from previous wave													
Row													
1	RB110=1-2	3,330	0	0	0	0	0	0	0	0	0	0	3,330
2	RB110=6												18
3	RB110=-1												0
4	RB120=2												7
5	RB120=3												2
6	RB120=4												53
7	DB135=2,-1 or DB110=7 or DB120=21-23,-1 or DB130=21-24,-1												100
8	DB110=3-6												0
New sample persons													
9	Reached age 16	26	0	0	0	0	0	0	0	0	0	0	26
10	Sample additions	0	0	0	0	0	0	0					0

Non-sample persons 16+													
11	From Wave 1 -2006	92	0	0	0	0	0	0	0	0	0	0	92
	Not from Wave 1- 2006	79	0	0	0	0	0	0	0	0	0	0	79

Sample persons from sample not forwarded from last wave (excluding died or not eligible according to tracing rules)													
13	From 2007												0

Sum of rows:

1,3,6,7,9,10	3,356	0	0	0	0	0	0	0	0	0	0	0	3,509
1,3,6,7,9,10,13	3,356	0	0	0	0	0	0	0	0	0	0	0	3,509
1,3,6,7,9,10,11	3,448	0	0	0	0	0	0	0	0	0	0	0	3,601

Wave response rate of sample persons =	0.956	Achieved sample size ratio for sample persons =	0.978
Wave response rate of co-residents =	1.000	Achieved sample size ratio for sample persons and co-residents =	0.985
Longitudinal follow-up rate =	0.956	Achieved sample size ratio for co-residents selected the first wave =	0.859
Rate (RB250=21) =	0.000		1.000
Rate (RB250=22) =	0.000		
Rate (RB250=23) =	0.000		
Rate (RB250=31) =	0.000		
Rate (RB250=32) =	0.000		
Rate (RB250=33) =	0.000		

**Table 25: Person Interview outcome in wave 4 (R1)**

		2008											
		RB250=11,12,13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHinc1	HHinc2	Pn	P1	Total
Sample persons from previous wave													
Row													
1	RB110=1-2	2,642	0	0	0	0	0	0	0	0	0	0	2,642
2	RB110=6												11

3	RB110=-1												0
4	RB120=2												4
5	RB120=3												7
6	RB120=4												35
7	DB135=2,-1 or DB110=7 or DB120=21-23,-1 or DB130=21-24,-1												0
8	DB110=3-6												0

New sample persons

9	Reached age 16	0	0	0	0	0	0	0	0	0	0	0	0
10	Sample additions	0	0	0	0	0	0	0	0	0	0	0	0

Non-sample persons 16+

11	From Wave 2-2007	161	0	0	0	0	0	0	0	0	0	0	161
	Not from Wave 2- 2007	65	0	0	0	0	0	0	0	0	0	0	65

Sample persons from sample not forwarded from last wave (excluding died or not eligible according to tracing rules)

13	From 2008												0
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Sum of rows:

1,3,6,7,9,10	2,642	0	0	0	0	0	0	0	0	0	0	0	2,677
1,3,6,7,9,10,13	2,642	0	0	0	0	0	0	0	0	0	0	0	2,677
1,3,6,7,9,10,11	2,803	0	0	0	0	0	0	0	0	0	0	0	2,838

Wave response rate of sample persons = 0.987  
Wave response rate of co-residents = n/a  
Longitudinal follow-up rate = 0.987  
Rate (RB250=21) = 0.000  
Rate (RB250=22) = 0.000  
Rate (RB250=23) = 0.000  
Rate (RB250=31) = 0.000  
Rate (RB250=32) = 0.000  
Rate (RB250=33) = 0.000

Achieved sample size ratio for sample persons = 0.975  
Achieved sample size ratio for sample persons and co-residents = 0.985  
Achieved sample size ratio for co-residents selected the first wave = 0.404  
Response rate for non-sample persons 1.000

### 2.3.3.3 Distribution of households

**Table 26: Distribution of households by DB110**

		<b>Total</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>
<b>2006</b>		5,447	0	0	0	0	0	0	0	0	5,447	0	0
	%	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
<b>2007</b>		8,819	2,909	60	0	6	0	0	0	86	5,462	0	296
	%	100.0	33.0	0.7	0.0	0.1	0.0	0.0	0.0	1.0	61.9	0.0	3.4
<b>2008</b>		10,993	5,076	116	2	11	14	1	0	50	5,418	0	305
	%	100.0	46.2	1.1	0.0	0.1	0.1	0.0	0.0	0.5	49.3	0.0	2.8
<b>2009</b>		7,244	6,527	153	5	7	17	0	0	52	0	0	483
	%	100.0	90.1	2.1	0.1	0.1	0.2	0.0	0.0	0.7	0.0	0.0	6.7

**Table 27: Distribution of households by DB120**

		<b>Total</b>	<b>11</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>2006</b>		5,389	4911	5	1	472
	%	100.0	91.1	0.1	0.0	8.8
<b>2007</b>		5,589	4,695	30	10	854
	%	100.0	84.0	0.5	0.2	15.3
<b>2008</b>		5,584	4,740	4	8	832
	%	100.0	84.9	0.1	0.1	14.9
<b>2009</b>		205	205	0	0	0
	%	100.0	100.0	0.0	0.0	0.0

**Table 28: Distribution of households by DB130**

		<b>Total</b>	<b>11</b>	<b>21</b>	<b>22</b>	<b>23</b>
<b>2006</b>		4,911	3,271	1,518	107	15
	%	100.0	66.6	30.9	2.2	0.3
<b>2007</b>		7,604	5,525	1,557	214	308
	%	100.0	72.7	20.5	2.8	4.1
<b>2008</b>		9,816	7,192	2,173	271	180
	%	100.0	73.3	22.1	2.8	1.8
<b>2009</b>		6,732	5,456	912	104	260
	%	100.0	81.0	13.5	1.5	3.9

**Table 29: Distribution of households by DB135**

		<b>Total</b>	<b>1</b>	<b>2</b>
<b>2006</b>		3,271	3,271	0
	%	100.0	100.0	0.0
<b>2007</b>		5,525	5,525	0
	%	100.0	100.0	0.0
<b>2008</b>		7,192	7,192	0
	%	100.0	100.0	0.0
<b>2009</b>		5,456	5,456	0
	%	100.0	100.0	0.0

### 2.3.3.4 Distribution of persons

**Table 30: Distribution of persons by membership status RB110**

		Total	Current household members				Not current household members	
			1	2	3	4	5	6
<b>2006</b>		7,654	7,654	0	0	0	0	0
	%	100	100	0	0	0	0	0
<b>2007</b>		13,200	12,861	28	107	50	143	11
	%	100	97.4	0.2	0.8	0.4	1.1	0.1
<b>2008</b>		17,236	16,550	58	231	83	275	39
	%	100	96.0	0.3	1.3	0.5	1.6	0.2
<b>2009</b>		13,005	12,168	58	301	125	304	49
	%	100	93.6	0.4	2.3	1.0	2.3	0.4

### 2.3.3.5 Item non-response

All income variables provided for EU-SILC have been fully imputed.

**Table 31: Item non-response at household and personal level 2006**

		Longitudinal sample 2006-2009: 2006 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<b>Total income component</b>									
HY010	Total gross household income	3,248	99.3	1,888	57.7	1,261	38.6	99	3
HY020	Total disposable household income	3,260	99.7	1,618	49.5	1,612	49.3	30	0.9
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	3,141	96	1,688	51.6	1,393	42.6	60	1.8
HY023	Total disposable household income before social transfers including old-age and survivors benefits	3,016	92.2	1,854	56.7	1,056	32.3	106	3.2
<b>Gross income components at household level</b>									
HY040	Income from rental of property or land	129	3.9	99	3	8	0.2	22	0.7
HY050	Family related allowance	920	28.1	814	24.9	80	2.4	26	0.8
HY060	Social exclusion not elsewhere classified	355	10.9	287	8.8	32	1	36	1.1
HY070	Housing allowance	450	13.8	394	12	0	0	56	1.7
HY080	Regular inter household cash transfer received	85	2.6	79	2.4	0	0	6	0.2

HY090	Interest, dividends etc	1,557	47.6	949	29	125	3.8	483	14.8
HY100	Interest repayments on mortgage	1,219	37.3	1,219	37.3	0	0	0	0
HY110	Income received by people aged under 16	30	0.9	30	0.9	0	0	0	0
HY120	Regular taxes on wealth	2,864	87.6	2,619	80.1	1	0	244	7.5
HY130	Regular inter household cash transfer paid	136	4.2	125	3.8	0	0	11	0.3
HY140	Tax on income and social contributions	2,691	82.3	1,712	52.3	692	21.2	287	8.8
Gross income components at personal level									
PY010	Employee cash or near cash income	3,044	50.1	2,240	36.8	160	2.6	644	10.6
PY020	Non-Cash employee income	259	4.3	225	3.7	26	0.4	8	0.1
PY035	Contribution to individual private pension plans	581	9.6	542	8.9	0	0	39	0.6
PY050	Cash benefits or losses from self-employment	425	7	319	5.2	2	0	104	1.7
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	196	3.2	139	2.3	0	0	57	0.9
PY090	Unemployment benefits	93	1.5	78	1.3	0	0	15	0.2
PY100	Old-age benefits	1,866	30.7	1,390	22.9	397	6.5	79	1.3
PY110	Survivor benefits	35	0.6	24	0.4	2	0	9	0.1
PY120	Sickness benefits	202	3.3	145	2.4	0	0	57	0.9
PY130	Disability benefits	186	3.1	144	2.4	8	0.1	34	0.6
PY140	Education-related allowances	58	1	50	0.8	0	0	8	0.1

**Table 32: Item non-response at household and personal level 2007**

		Longitudinal sample 2006-2009: 2007 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
Total income component									
HY010	Total gross household income	5,506	99.7	3,248	58.8	2,119	38.4	139	2.5
HY020	Total disposable household income	5,516	99.8	3,233	58.5	2,236	40.5	47	0.9
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	5,393	97.6	3,372	61.0	1,924	34.8	97	1.8
HY023	Total disposable household income	5,274	95.5	3,633	65.8	1,471	26.6	170	3.1

	before social transfers including old-age and survivors benefits								
Gross income components at household level									
HY040	Income from rental of property or land	257	4.7	213	3.9	4	0.1	40	0.7
HY050	Family related allowance	1,704	30.8	1,433	25.9	176	3.2	95	1.7
HY060	Social exclusion not elsewhere classified	536	9.7	410	7.4	65	1.2	61	1.1
HY070	Housing allowance	710	12.9	597	10.8	0	0.0	113	2.0
HY080	Regular inter household cash transfer received	164	3.0	149	2.7	0	0.0	15	0.3
HY090	Interest, dividends etc	2,771	50.2	1,930	34.9	208	3.8	633	11.5
HY100	Interest repayments on mortgage	2,146	38.8	2,146	38.8	0	0.0	0	0.0
HY110	Income received by people aged under 16	56	1.0	54	1.0	0	0.0	2	0.0
HY120	Regular taxes on wealth	5,091	92.1	4,772	86.4	0	0.0	319	5.8
HY130	Regular inter household cash transfer paid	266	4.8	246	4.5	0	0.0	20	0.4
HY140	Tax on income and social contributions	4,675	84.6	3,148	57.0	1,106	20.0	421	7.6
Gross income components at personal level									
PY010	Employee cash or near cash income	5,320	51.1	4,143	39.8	311	3.0	866	8.3
PY020	Non-Cash employee income	407	3.9	362	3.5	34	0.3	11	0.1
PY035	Contribution to individual private pension plans	1089	10.5	1048	10.1	0	1.0	41	0.4
PY050	Cash benefits or losses from self-employment	762	7.3	580	5.6	0	0.0	181	1.7
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	394	3.8	266	2.6	0	0.0	128	1.2
PY090	Unemployment benefits	127	1.2	104	1.0	0	0.0	23	0.2
PY100	Old-age benefits	3,298	31.7	2,443	23.5	696	6.7	159	1.5
PY110	Survivor benefits	66	0.6	54	0.5	4	0.0	8	0.1
PY120	Sickness benefits	331	3.2	252	2.4	0	0.0	79	0.8
PY130	Disability benefits	355	3.4	253	2.4	21	0.2	81	0.8
PY140	Education-related allowances	114	1.1	93	0.9	0	0.0	21	0.2

**Table 33: Item non-response at household and personal level 2008**

		Longitudinal sample 2006-2009: 2008 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<b>Total income component</b>									
HY010	Total gross household income	7,151	99.4	4,264	59.3	2,765	38.4	122	1.7
HY020	Total disposable household income	7,161	99.6	4,559	63.4	2,568	35.7	34	0.5
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	7,016	97.6	4,557	63.4	2,296	31.9	163	2.3
HY023	Total disposable household income before social transfers including old-age and survivors benefits	6,823	94.9	4,696	65.3	1,786	24.8	341	4.7
<b>Gross income components at household level</b>									
HY040	Income from rental of property or land	378	5.3	284	3.9	35	0.5	59	0.8
HY050	Family related allowance	2,175	30.2	1,938	26.9	183	2.5	54	0.8
HY060	Social exclusion not elsewhere classified	675	9.4	529	7.4	77	1.1	69	1.0
HY070	Housing allowance	910	12.7	890	12.4	0	0.0	20	0.3
HY080	Regular inter household cash transfer received	224	3.1	203	2.8	0	0.0	21	0.3
HY090	Interest, dividends etc	3,297	45.8	2,246	31.2	237	3.3	814	11.3
HY100	Interest repayments on mortgage	2,607	36.2	2,607	36.2	0	0.0	0	1.0
HY110	Income received by people aged under 16	0	0.0	0	0.0	0	0.0	0	0.0
HY120	Regular taxes on wealth	6,596	91.7	5,996	83.4	0	0.0	600	8.3
HY130	Regular inter household cash transfer paid	396	5.5	331	4.6	4	0.1	61	0.8
HY140	Tax on income and social contributions	5,928	82.4	3,704	51.5	1,710	23.8	514	7.1
<b>Gross income components at personal level</b>									
PY010	Employee cash or near cash income	6,875	50.7	5215	38.5	441	3.3	1219	9.0
PY020	Non-Cash employee income	493	3.6	493	3.6	0	0.0	0	0.0
PY035	Contribution to individual private pension plans	1416	10.4	1270	9.4	9	0.1	137	1.0
PY050	Cash benefits or losses from self-employment	1017	7.5	651	4.8	77	0.6	289	2.1
PY070	Value of goods	-	-	-	-	-	-	-	-

	produced by own-consumption								
PY080	Pension from individual private plans	642	4.7	445	3.3	0	0.0	197	1.5
PY090	Unemployment benefits	157	1.2	140	1.0	0	0.0	17	0.1
PY100	Old-age benefits	4463	32.9	3356	24.8	991	7.3	116	0.9
PY110	Survivor benefits	67	0.5	49	0.4	4	0.0	14	0.1
PY120	Sickness benefits	423	3.1	341	2.5	0	0.0	82	0.6
PY130	Disability benefits	488	3.6	368	2.7	18	0.1	102	0.8
PY140	Education-related allowances	164	1.2	118	0.9	0	0.0	46	0.3

**Table 34: Item non-response at household and personal level 2009**

		Longitudinal sample 2006-2009: 2009 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
<b>Total income component</b>									
HY010	Total gross household income	5,442	99.7	3,737	68.5	1,659	30.4	46	0.8
HY020	Total disposable household income	5,453	99.9	3,797	69.6	1,645	30.2	11	0.2
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	5,337	97.8	3,961	72.6	1,342	24.6	34	0.6
HY023	Total disposable household income before social transfers including old-age and survivors benefits	5,178	94.9	4,220	77.3	831	15.2	127	2.3
<b>Gross income components at household level</b>									
HY040	Income from rental of property or land	289	5.3	260	4.8	9	0.2	20	0.4
HY050	Family related allowance	1,609	29.5	1,422	26.1	153	2.8	34	0.6
HY060	Social exclusion not elsewhere classified	540	9.9	422	7.7	63	1.2	55	1.0
HY070	Housing allowance	681	12.5	586	10.7	0	0.0	95	1.7
HY080	Regular inter household cash transfer received	164	3.0	159	2.9	1	0.0	4	0.1
HY090	Interest, dividends etc	2,132	39.1	1,728	31.7	97	1.8	307	5.6
HY100	Interest repayments on mortgage	1,829	33.5	1,829	33.5	0	0.0	0	1.0
HY110	Income received by people aged under 16	0	0.0	0	0.0	0	0.0	0	0.0
HY120	Regular taxes on wealth	5,029	92.2	4,582	84.0	0	0.0	447	8.2

HY130	Regular inter household cash transfer paid	250	4.6	236	4.3	0	0.0	14	0.3
HY140	Tax on income and social contributions	4,368	80.1	3,452	63.3	704	12.9	212	3.9
Gross income components at personal level									
PY010	Employee cash or near cash income	4,952	48.3	4402	42.9	229	2.2	321	3.1
PY020	Non-Cash employee income	343	3.3	321	3.1	9	0.1	13	0.1
PY035	Contribution to individual private pension plans	1187	11.6	932	9.1	0	0.0	255	2.5
PY050	Cash benefits or losses from self-employment	772	7.5	635	6.2	7	0.1	130	1.3
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	538	5.2	421	4.1	0	0.0	117	1.1
PY090	Unemployment benefits	162	1.6	150	1.5	0	0.0	12	0.1
PY100	Old-age benefits	3739	36.5	2900	28.3	792	7.7	47	0.5
PY110	Survivor benefits	48	0.5	36	0.4	3	0.0	9	0.1
PY120	Sickness benefits	291	2.8	238	2.3	0	1.0	53	0.5
PY130	Disability benefits	361	3.5	267	2.6	20	0.2	74	0.7
PY140	Education-related allowances	129	1.3	117	1.1	0	1.0	12	0.1

## 2.4 Mode of data collection

**Table 35: Distribution of household members by data status – all household members (16+)**

		RB250								
		Total	11	12	14	21	23	31	32	33
<b>2006</b>	Number	6,080	6,080	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>2007</b>	Number	10,405	10,405	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>2008</b>	Number	13,552	13,552	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>2009</b>	Number	10,255	10,255	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 36: Distribution of household members by data status – sample persons 16+**

		RB250								
		Total	11	12	14	21	23	31	32	33
2006	Number	6,080	6,080	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	Number	10,313	10,313	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	Number	13,273	13,273	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	Number	9,769	9,769	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 37: Distribution of household members by data status – co-residents (16+)**

		RB250								
		Total	11	12	14	21	23	31	32	33
2006	Number	0	0	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2007	Number	92	92	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	Number	279	279	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	Number	486	486	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Table 38: Distribution of household members by type of interview – all household members (16+)**

		RB260					
		Total	1	2	3	4	5
2006	Number	5,998	0	5,283	0	0	715
	%	100.0	0.0	88.1	0.0	0.0	11.9
2007	Number	10,216	0	9,169	0	0	1,047
	%	100.0	0.0	89.8	0.0	0.0	10.2
2008	Number	13,316	0	11,834	0	0	1,469
	%	100.0	0.0	88.9	0.0	0.0	11.0
2009	Number	10,089	0	9,200	0	0	889
	%	100.0	0.0	91.2	0.0	0.0	8.8

**Table 39: Distribution of household members by type of interview – sample persons (16+)**

		RB260					
		Total	1	2	3	4	5
2006	Number	5,998	0	5,283	0	0	715
	%	100.0	0.0	88.1	0.0	0.0	11.9
2007	Number	10,135	0	9,114	0	0	1,021
	%	100.0	0.0	89.9	0.0	0.0	10.1
2008	Number	13,088	0	11,694	13	0	1,381
	%	100.0	0.0	89.3	0.1	0.0	10.6
2009	Number	9,652	0	8,883	0	0	769
	%	100.0	0.0	92.0	0.0	0.0	8.0

**Table 40: Distribution of household members by type of interview – co-residents (16+)**

		<b>RB260</b>					
		<b>Total</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>2006</b>	Number	0	0	0	0	0	0
	%	100.0	0.0	0.0	0.0	0.0	0.0
<b>2007</b>	Number	81	0	55	0	0	26
	%	100.0	0.0	67.9	0.0	0.0	32.1
<b>2008</b>	Number	228	0	140	0	0	88
	%	100.0	0.0	61.4	0.0	0.0	38.6
<b>2009</b>	Number	437	0	317	0	0	120
	%	100.0	0.0	72.5	0.0	0.0	27.5

## 2.5 Imputation procedure

The strategy used to impute UK EU-SILC was consistent with the options proposed in the following Eurostat task-force documents associated with donor-based imputation methodology:

EU-SILC 74/02  
EU-SILC 136/04  
EU-SILC 154/05

The UK EUSILC Imputation Strategy was developed with the primary aims of imputing for all item level missingness, resolving inconsistencies, and preserving both cross-sectional and longitudinal relationships in the responses for the households and persons affected. The strategy was also designed to preserve the maximum amount of observed data.

Meeting the aims of the strategy was not trivial as the cross-sectional and longitudinal correlations were both nested and complex. In any one year, the UK EUSILC dataset contained over 400 routing and income variables: routing variables indicated whether or not the respondent received an amount, whilst the amount itself was specified by one or more consecutive variables. Missing values were present in both the routing and the amounts collected.

- Further complications included:
- legal constraints which make some combinations of the routing variables invalid;
- highly correlated relationships amongst subsets of the variables, for example: earnings before and after taxation followed by an associated time period for which the payment relates;
- panel aspects of the survey that introduced further correlations between years in addition to those within year.

To meet the aims of the imputation strategy the ONS implemented an iterative, two-stage imputation process: Stage 1 focused on the imputation of missing routing; Stage 2 focused on the imputation of missing amounts and time periods.

The imputation process was supported by statistical tools and used standard statistical techniques for panel data, including:

- SAS (Statistical Analysis System) – to facilitate deductive imputation. This was applied to correct for missing values by implementing propositional relationships in the data based on logical rules and legal constraints. For example, using gross values with auxiliary variables to derive missing net values.
- SPSS AnswerTree - to identify key predictors to partition the data into homogeneous classes for subsequent imputation.
- CANCEIS (CANadian Census Edit and Imputation System) - for stochastic imputation. CANCEIS implements a highly efficient nearest neighbour imputation method that preserves the shape of the distribution whilst also estimates and maintains observed relationships and distributional parameters. Stochastic imputation ensures less distortion in the estimates of variance. Asymmetric trimming was also applied as a refinement to exclude outlying values which might have otherwise caused excessive influence. The quality of the final data was validated in two ways: by calculating expected values; and comparing pre and post-imputation distributions.

## 2.6 Imputed rent

A UK EU-SILC imputed rent variable was supplied for the first time in 2007. Estimates of imputed rent were generated through the use of hedonic regression modelling, incorporating Mill's correction (based on the Heckman method). The explanatory variables used in the regression were region, type of dwelling (flat, semidetached/terraced house, detached house), size (number of rooms), value of dwelling (Council Tax band, except Northern Ireland), thermal comfort (ability to keep home adequately warm) and seniority (year of contract).

## 2.7 Company cars

In the UK, company cars are taxed based on their CO<sub>2</sub> emissions. Therefore, UK EU-SILC assigns the benefit of having access to a company car as being equal to the level of tax. However, it is difficult to estimate the level of tax, and therefore the following method is used.

EU-SILC UK asks several questions about company cars. First, the survey establishes whether the household has any company cars. Second, it establishes what the manufacturer's list price for the vehicle was when it was new. If the respondent is unable to provide an answer, they are asked which price band they think the company car sits in. If the respondent gives a band price the answer is translated into a mid-point price. For example, a Mazda saloon with a band price between £10,001-£13,000 would be given a 'list' price of £11,500. If the list price is unknown, the make, model and engine size are established for each vehicle.

The estimation of the value of using a company car for private purposes (excluding payment of fuel) is done using the following elements:

1. Type of fuel used
2. Data from VCA (Vehicle Certification Agency, UK).
3. Price of the car.

Once the price of the car is known (using one of the methods described above) a factor based on fuel type and emissions of the engine is applied to that list price. However, this is problematic as EU-SILC UK has no way of identifying what the cylinder capacity (cc) of the car in question is and therefore no real idea about what the car emissions would be. Although data on the make and model of each car is collected, the quality of answers given by respondents is extremely variable, for instance, answers such as 'a red ford' offer little value to a calculation.

Nevertheless cylinder capacity and emissions information is obtained by using data from the VCA. The VCA provide data on approximately 770 car types registered in the UK.

The 770 car types are banded together into three cylinder capacity engine group sizes in an attempt to get an average emission for each band.

**Table 41: Average CO2 emission by Cylinder Capacity**

<b>Cylinder Capacity</b>	<b>Average CO<sub>2</sub> emission</b>
Up to 1400	145
1401 to 2000	187
2001 to 4000	246

Once this process is completed an assumption is made that the cylinder capacity of a car is linked to the price of the car.

The data for 2008/09 is shown in Table 42.

**Table 42: Band price of a motor vehicle based on CC and average CO<sub>2</sub> emissions**

<b>Cylinder Capacity</b>	<b>Average CO<sub>2</sub> emissions</b>	<b>Car price (£)</b>
Up to 1400cc	145	0 – 11,999
1401 to 2000cc	187	12,000 – 24,999
2001 to 4000cc	246	25,000 – 99,999

Cars that fall into a price band are given the appropriate cylinder capacity and the data in the Table 43 is used to apply an appropriate tax rate (the tax rate used by Her Majesties Revenue and Customs to value the benefit for tax purposes).

**Table 43: Tax rate based on CO<sub>2</sub> emission rates (per cent)**

<b>2008/2009</b>	<b>CO<sub>2</sub> tax emission rate (percentage rate)</b>
145	17
187	25
246	35

These percentage rates are the factors that are applied to the car prices to produce a monetary benefit for each company car in a household.

$$\text{Car benefit} = (\text{car price}) * \text{CO}_2 \text{ tax emission rate}$$

### 3. Comparability

This section reports on the differences between Eurostat definitions and the definitions the UK applied in EU-SILC 2009. It also reports on the impact of these differences with regards to comparability.

#### 3.1 Basic concepts and definitions

##### ***Reference population***

No difference to the common definition.

##### ***Private household***

A household is defined as:

“a single person or a group of people who have the address as their only or main residence and who either share one meal a day or share the living accommodation” (General Lifestyle Survey 2006, 2007, 2008 & 2009).

A group of people is not counted as a household solely on the basis of a shared kitchen or bathroom.

##### ***The household membership***

A person is in general regarded as living at an address if he or she (or the informant) considers the address to be his or her main residence. There are however, certain rules which take precedent over this criterion.

From 2008 students who are living in halls of residence are also included as residents of the household sampled even if they are not *in situ* at the time of the interview. Other children of any age away from the home in a temporary job and children under 16 at boarding school are always included in the parental household.

Children aged 16 or over who live away from home for the purposes of either work or study and come home only for holidays are not included at the parental address under any circumstances.

Anyone who has been away from the address continuously for 6 months or longer is excluded.

Anyone who has been living continuously at the address for 6 months or longer is included even if she has his or her main residence elsewhere.

Addresses used only as second homes are never counted as a main residence.

##### ***Income reference period***

EU-SILC UK, like all other official income surveys in UK, uses continuous interviewing with interviews spread evenly throughout the year. The survey measures current income. So for example, for income from earnings and benefits, respondents will provide figures which relate most commonly to the last week, two weeks, or month. With earnings in particular, respondents are asked for usual earnings. These figures, which represent current (and usual) incomes are then annualised (weekly estimates multiplied by 52, monthly by 12 etc). Income from self-employment can be reported for a variety of periods, but it is always up-rated (using the UK's average earnings index) to the interview date. For income from investment and employee non-cash income respondents

are most likely provide their most recent annual or half-yearly income that they received from this source. This income would be annualised, although there is no up-rating.

This approach is adopted in the UK because it is much easier for respondents to provide estimates of current income, than income for a specific reference period, say the most recent financial year. In the UK only a relatively small proportion of the adult population fill in tax returns, and the rest of the population probably never actually calculate what their annual income is. For this reason, it would be very difficult to collect an estimate of annual income corresponding to a fixed reference year.

So the estimates of income do not correspond strictly to an income reference year. However we can regard each household's estimate of annualised current income, as corresponding to a 12 month period centred on the interview date. So for a household interviewed in early January 2009, we can regard their income as being measured for the period July 2008 to June 2009, and similarly for a household interviewed in December 2009, the income estimate can be regarded as referring to the period July 2009 to June 2010. Since interviews are spread evenly throughout the year, for any one survey year, the interview reference periods collectively, are centred on the calendar year. And therefore it is reasonable to regard aggregate statistics produced from the full annual datasets, as measuring annual income in the current survey year. So the EU-SILC UK 2009 survey, measures current annual income in 2009.

In the UK, household income statistics, and especially aggregate statistics such as those that are produced from EU-SILC, are generally used and interpreted on the assumption that this distinction between annualised current income, and what might be called a 'true' annual income, is small<sup>1</sup>.

#### ***The period for taxes on income and social insurance contributions***

As above.

#### ***The reference period for taxes on wealth***

The reference period for taxes on wealth is based on data provided for the financial years April 2008 –March 2009 and April 2009–March 2010. All interviewing for EU-SILC UK took place between January 2009 and 28 February 2010.

#### ***The lag between income reference period and current variables***

Since the survey measures current income, there is no lag between the income variables and the other variables.

#### ***The total duration of the data collection of the sample***

EU-SILC UK makes use of continuous interviewing with data collection being evenly spread over complete calendar years. In practice a small number of interviews are not completed until early the following year. In 2009, 99.0% of interviews took place between 1<sup>st</sup> January 2009 and 31<sup>st</sup> December 2010, with the remaining interviews completed between 1<sup>st</sup> January 2010 and 31<sup>st</sup> January 2010.

#### ***Basic information on activity status during the income reference period***

Basic information on activity status is collected using a rolling (moving) 12-month period. Therefore, respondents are asked to provide their current activity status and their activity status for the 12-month period preceding this interview.

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<sup>1</sup> A Comparison of Current and Annual Measures of Income in the British Household Panel Survey; Journal of Official Statistics, Vol. 22, No. 4, 2006, pp. 733–758

## **3.2 Components of income**

### **3.2.1 Differences between the national definitions and standard EU-SILC definitions, and an assessment, if available, of the consequences of the differences mentioned**

This section describes the major differences between the national definitions and standard EU-SILC definitions. The 'national definition' of household income is taken to be the Before Housing Costs (BHC) measure of income used in the Department for Work and Pensions (DWP) publication Household's Below Average Income (HBAI), the source for national poverty statistics.

#### ***Total disposable household gross income (HY010)***

#### ***Total disposable household income (HY020)***

#### ***Total disposable household income before social transfers other than old-age and survivor's benefits (HY022)***

#### ***Total disposable household income before social transfers including old-age and survivor's benefits***

Differences between the national definition and the EU-SILC definition of income have been described below, for each of the components of EU-SILC income.

#### ***Imputed rent (HY030G/N)***

Imputed rent is not included in the national definition of household income. This variable was not provided as part of the 2006 EU-SILC data delivery as it is only mandatory from 2007 onwards.

#### ***Income from rental of a property or land (HY040G/N)***

No major differences between the national and EU-SILC definition.

#### ***Family/children related allowances (HY050G/N)***

The national definition of income includes the cash value of free school meals provided to children from disadvantaged homes. This is not included in the EU-SILC definition of income.

#### ***Social exclusion not elsewhere classified (HY060G/N)***

#### ***Housing allowances (HY070G/N)***

#### ***Regular inter-household cash transfer received (HY080G/N)***

#### ***Interest, dividends, profit from capital investments in unincorporated business (HY090G/N)***

No major differences between the national and EU-SILC definitions.

#### ***Interest repayments on mortgage (HY100G/N)***

Interest repayments on mortgages are not included as deductions within either the national or EU-SILC definitions of income, because neither includes imputed rent.

#### ***Income received people aged under 16 (HY110G)***

The national definition of income includes income received by people aged under 16, as does the EU-SILC definition of income.

#### ***Regular taxes on wealth (HY120G)***

No difference between the national and EU-SILC definitions.

#### ***Regular inter-household cash transfer paid (HY130G/N)***

No major differences between the national and EU-SILC definitions.

***Tax on income and social contributions (HY140G)***

In the national definition of income, contributions to private pensions are deducted from income. In the EU-SILC definition of income, contributions to private pensions are not deducted, rather they are considered as a use of disposable income.

***Repayments/receipts for tax adjustments (HY145N)***

This component of income is included in the national definition of income. In EU-SILC, this component is not measured directly. For most components of income, gross and net incomes are collected separately, with taxes computed as the difference between gross and net incomes. Repayments/receipts for tax adjustments are assumed to be captured as part of this difference between gross and net incomes, and hence recorded under HY140G.

***Cash or near-cash employee income (PY010G/N)***

No major differences between the national and EU-SILC definitions.

***Non-cash employee income (PY020G/N)***

The national definition does not include non-cash employee income, whereas EU-SILC includes an estimate for company cars (although not any fuel provided by the employer).

***Cash profits or losses from self-employment (including royalties) (PY050G/N)***

No conceptual differences between the national and EU-SILC definitions.

***Value of goods produced for own consumption (PY070G/N)***

This component of income is assumed to be zero in the UK in both the national definition, and in UK EU-SILC. This question is not asked and the variables are set to zero in the microdata. Home grown fruit and vegetables are assumed to have a negligible benefit when calculating household income, in many cases being grown for pleasure rather than to save money. Monetary benefits may even be negative when production costs are taken into account. Data from the Living Costs and Food survey show that less than 3 per cent of households record this type of income and even for those that do it accounts for less than half of one per cent of their disposable income.

***Unemployment benefits (PY090G/N)***

No major differences between the national and EU-SILC definitions.

***Old-age benefits (PY100G/N)***

All benefits included as old-age benefits are also included in the national definition of income. However in the national definition, income from private pensions is included whereas in EU-SILC, income from private pensions is only be included in the definition of income from 2007 onwards. In addition, the national definition also includes the value free television licences provided to those over the age of 75.

***Survivors' benefits (PY110G/N)***

***Sickness benefits (PY120G/N)***

***Disability benefits (PY130G/N)***

No major differences between the national and EU-SILC definitions.

***Education-related allowances (PY140G/N)***

In the national definition of income, student loans are included as income, and student loan repayments are deducted from income. However in EU-SILC, student loans are not treated as income, and loan repayments are not deducted from income.

***Gross monthly earnings for employees (PY200G/N)***

No major differences between the national and EU-SILC definitions.

### **3.2.2 The source or procedure for the collection of income variables**

All income variables are collected at the point of interview. Respondents are not asked to provide any documentation to support their answers. Increasingly, interviewers are being encouraged to ask respondents whether it is possible to consult their payslip (if they are working). However this is not mandatory.

No information is collected from registers.

### **3.2.3 The form in which income variables at component level have been obtained**

For most income components which are subject to taxation and/or social security contributions, respondents are asked to provide net and gross amounts. The only exception to this is income from interest, dividends, and capital investments, which is collected either gross or net, and for which tax paid is then estimated.

Total income for an individual/household refers to income at the time of the interview. If the last pay packet/cheque was unusual, for example it included holiday pay in advance or a tax refund, the respondent is asked for usual pay. No account is taken of whether a job is temporary or permanent.

### **3.2.4 The method used for obtaining income target variables in the required form**

Gross and net income variables were asked separately, if applicable. See section 2.6 for more detail.

## **3.3 Tracing rules**

For UK EU-SILC 2007, persons aged 14 and above who could not be contacted in 2006 were not always re-contacted in 2006. Furthermore, information on *former residents* was not collected. A similar process was followed between 2007 and 2008, and 2008 and 2009.

## 4. Coherence

Coherence refers to the comparison of target variables with external sources. The target variables in EU-SILC UK are a set of compulsory variables, defined by Eurostat.

### 4.1 Comparison of income target variables and the number of persons who receive income from each 'income component', with external sources

Results from two other survey sources have been used to validate EU-SILC results – the Family Resources Survey, and the Living Costs & Food Survey.

#### *Family Resources Survey*

The Family Resources Survey (FRS) collects information on the incomes and circumstances of private households in the United Kingdom (or Great Britain before 2002-03).

The survey is sponsored by the Department for Work and Pensions.

The FRS is used primarily to validate the indicators of poverty and social exclusion. Before the introduction of EU-SILC, the Laeken and Pensions indicators were produced using data from the FRS. Comparisons between EU-SILC and FRS-based indicators continue so that any apparent differences between national poverty estimates and EU-SILC estimates can be explained. This work will be ongoing, and in the first four years of EU-SILC, has served as a useful way of validating the new EU-SILC data, and highlighting any possible problems that there might be with the EU-SILC data.

#### *Living Cost & Food Survey*

The Living Costs and Food Survey (the UK's HBS), formerly known as the Expenditure and Food Survey, is a comprehensive overview of all aspects of household expenditure and income for the year 2009 derived from a survey of around 7,000 households in the UK. Before 2008 the survey was named the Expenditure and Food Survey. It contains analyses of household expenditure on goods and services by household income, composition, size, type and location. The results are widely seen as providing one of the most accurate pictures available of what households in the UK spend their money on today.

EU-SILC income variables have been compared with the detailed income information collected through the Living Costs and Food Survey particularly that which is published in the ONS report 'The Effects of Taxes and Benefits on Household Income'.

## 5. Known Issues with Data

See Annex 3: Explanation of Validation Failures for details on validation failures for the indicator programs.

### 5.1 PY030 and PY200 Error

Recent quality assurance work has highlighted an error in the derivation of PY030 on historical datasets. This has been corrected for 2010 but previous data including the 2006-9 longitudinal file is currently incorrect and will be updated as soon as possible.

Similarly, the derivation of the flag PY200G\_F has resulted in too many cases being coded as -1. This has been corrected for 2010 but previous data including the 2006-9 longitudinal file will be updated as soon as possible.

### 5.2 Variables not asked in error or not asked by proxy

There was an error in the UK questionnaire whereby a number of labour variables were not asked through 2008 and from January-September 2009. This error affects variables:

- PL140, PL160, PL190, PL200

Additionally, the update to ask these variables by proxy response was not implemented on a number of labour variables. This affects:

- PL030/1, PL020, PL060, PL210A-K, PL140, PL160, PL190, PL200

The arrears variables (HS020 and HS030) had used a trailer module question for 2008. There was an error with the trailer module in January of 2008 and so 5.4% of households on the cross-sectional file did not answer the trailer module questions. Additionally, there was an error in the questionnaire whereby these questions were not asked until August 2009.

The UK Imputation method uses a donor method and therefore the extent of the missing data would make it extremely difficult to predict the distribution for these variables. However, the UK methodology team aim to impute the 'arrears' variables (HS020, HS030) using 2 years data either side of the gap i.e. 07-08 and 2010-11 during 2012. An updated dataset will be provided as soon as possible.

### 5.3 Degree of Urbanization (DB100)

For 2010, the degree of urbanization method has been updated to match that used by the Labour Force Survey. The new classification has increased the proportion of thinly populated areas: on the old method densely populated areas covered 74.6% of the population, intermediate areas 16.2%, thinly populated areas 4.8% and 4.4% were not classifiable. With the revised method densely populated areas covered 62.7% of the population, intermediate areas 18.3%, thinly populated areas 16.1% and 4.4% were not classifiable. The 2006-9 longitudinal data uses the old method.

## **5.4 Regular taxes on wealth (HY120)**

In Great Britain local authorities collect council tax but the council tax does not apply in Northern Ireland (N.I.). Consequently, the N.I. questionnaire does not ask about council tax. The corresponding tax in N.I. is called rates. Households in N.I. have been given an average value for rates. This section in the questionnaire has been amended for 2012 to ask household rate information.

## **5.5 Highest ISCED level attained (PE040)**

In 2009 and previous years respondents who replied they had “other” qualifications have been coded as having post-secondary non tertiary level qualifications. This has been revised for 2010, so the “other” category is not used, as it cannot be classified to this level of detail. Longitudinal data has been used to code these cases when it is available, or they have been set to missing when this is not possible. Therefore the distributions of PE040 will differ when comparing pre-2009 and post-2009 data.

## **Annex 1: Government Office Region regional stratifier**

The Government Office Region regional stratifier:

1. North East Metropolitan
2. North East Non-Metropolitan
3. North West Metropolitan
4. North West Non-Metropolitan
5. Merseyside
6. Yorkshire and Humberside Metropolitan
7. Yorkshire and Humberside Non-Metropolitan
8. East Midlands
9. West Midlands Metropolitan
10. West Midlands Non-Metropolitan
11. Eastern Outer Metropolitan
12. Eastern Other
13. Inner London North-East
14. Inner London North-West
15. Inner London South-East
16. Inner London South-West
17. Outer London North-East
18. Outer London North-West
19. Outer London South-East
20. Outer London South-West
21. South East Outer Metropolitan
22. South East Other
23. South West
24. Wales 1 – Glamorgan, Gwent
25. Wales 2 – Clwydd, Gwynedd, Dyfed, Powys
26. Highlands, Grampian, Tayside
27. Fife, Central, Lothian
28. Glasgow Metropolitan
29. Strathclyde (excluding Glasgow)
30. Borders, Dumfries, Galloway

## Annex 2: Socio-economic groups (Operational categories and sub-categories of NS-SEC)

Group	Operational categories and sub-categories
1	Employers in large organisations
2	Higher managerial occupations
3	Higher professional occupations
4	Lower professional and higher technical occupations
5	Lower managerial occupations
6	Higher supervisory occupations
7	Intermediate occupations
8	Employers in small organisations
9	Own account workers
10	Lower supervisory occupations
11	Lower technical occupations
12	Semi-routine occupations
13	Routine occupations
14	Never worked and long-term unemployed
15	Full-time students
16	Occupations not stated or inadequately described
17	Not classifiable for other reasons

The category names used for NS-SEC (National Statistics – Socio-Economic Classification) do not refer to ‘skill’. This is quite deliberate since the classification is not based on skill levels.

### Annex 3: Explanation of validation failures

#### Household Data file

Variable	Issue	Explanation/Action
HB060 - Year of Household interview	HB060=2010 for 55 cases	This error occurs for the cases for which HB060 (year of household interview) is not 2009. These were the cases which were sampled but household interviews could not be completed during 2009 due to operational difficulties, and instead interviews took place in 2010. Otherwise, all these cases are valid.
HY030N/G - Imputed rent	2006 3271 (100% missing)	This variable was not mandatory until 2007 and so has not been supplied for earlier years. Flags are set to -1 for 2006.
HS020 - Arrears on utility bills	2008 414 (6% missing) 2009 3310 (61% missing)	This variable has used a trailer module question for 2008. There was an error with the trailer module in January of 2008 and so 5.4% of households on the cross-sectional file did not answer the trailer module questions. Additionally, there was an error in the questionnaire whereby these questions were not asked until August 2009. For the remaining months there were less than 5% missing values
HS030 - Arrears on hire purchase instalments or other loan payments	2008 414 (12% missing) 2009 3310 (76% missing)	This variable has used a trailer module question for 2008. There was an error with the trailer module in January of 2008 and so 5.4% of households on the cross-sectional file did not answer the trailer module questions. Additionally, there was an error in the questionnaire whereby these questions were not asked until August 2009. For the remaining months there were less than 5% missing values
HS130 - Lowest monthly income to make ends meet	2006 236 (7% missing) 2007 328 (6% missing)	The data have been checked. These respondents felt unable to provide the amounts for this variable.
HH060 - Current rent related to occupied dwelling	2006 98 (11% missing) 2007 152 (11% missing) 2008 147 (8% missing) 2009 107 (8% missing)	The majority of these cases are renting furnished accommodation so cannot be coded to -2 as HH020 is not 2 or 3. These have been given flags of -1. The remaining cases have reported paying zero rent for the accommodation last time it was due.
HH061- Subjective rent related to non-tenant paying rent at market price	2007 5525 (100% missing) 2008 7193 (100% missing) 2009 5456 (100% missing)	This variable is missing for 100% of households because it has not been collected or imputed for the UK.

## Personal Register file

Variable	Issue	Explanation/Action
RB031 - Year of immigration	2006 7654 (100% missing) 2007 13200 (100% missing) 2008 342 (20% missing) 2009 256 (22% missing)	This variable was introduced in 2008. The missing values are for people who refused to respond. The proportion of missing values is high because there are so few respondents reporting immigration.
RB140 - Month when the person moved out or died	2007 139 (90% missing) 2008 240 (76% missing) 2009 280 (79% missing)	Question is only asked of people who are discovered to be movers during the interview. There is no data for people who have moved in the 12 months between interviews and have informed us before the interview.
RB150 - Year when the person moved out or died	2007 139 (90% missing) 2008 240 (76% missing) 2009 280 (79% missing)	As above.
RB170 - Main activity status during the income reference period	2006 109 (71% missing) 2007 225 (71% missing) 2008 241 (68% missing)	This question is only applicable for non-current household members. The missing values are respondents who have moved out/died but we don't collect the data from these people. For a small amount of people we can derive the data from the previous year but as we are not able to do this for all then the rest will be missing.
RB190 - Year when the person moved in	Invalid values Year PID RB190 RB190_F ----- 2009 153920002 2010 1 2009 153920003 2010 1 2009 153920004 2010 1 2009 209850002 2010 1 2009 214050004 2010 1 2009 214140004 2010 1 2009 242790005 2010 1	This variable had been incorrectly set to the year of interview in previous years. These cases were interviewed in January 2010. The data are not available for the UK at present. We are investigating adding a question to the UK questionnaire to collect the information from 2011.

## Personal Data file

Variable	Issue	Explanation/Action
PB140 - Year of birth	Invalid values Year PID PB140 PB140_F ----- 2009 139980004 1993 1 2009 140990003 1993 1 2009 141000002 1993 1 2009 141330003 1993 1	This check failure takes place for cases when age is equal to '15' and is due to the way the Eurostat checking program computes age by subtracting RB080 (year of birth) from RB010 (year of interview) decreased by one. If actual age is worked out by taking integer part of 'date of interview - date of birth', in that case age will be higher by '1' year than the age worked out in the checking program. Therefore we would not consider this to be a validation failure, rather a function of the way the survey is done in the UK.
PE040 - Highest ISCED level attained	2006 619 (10% missing) 2007 1868 (18% missing) 2008 1470 (11% missing) 2009 966 (9% missing)	This question has not been asked by proxy - this will be corrected for 2011.
PL030 - Self-defined current economic status	2006 604 (10% missing) 2007 916 (9% missing) 2008 1576 (12% missing)	This question has not been asked by proxy - this will be corrected for 2011.
PL031 - Self-	2006 6080 (100% missing)	This variable was created in 2009. It is set to

defined current economic status	2007 10405 (100% missing) 2008 13554 (100% missing)	missing for previous years.
PL020 - Actively looking for a job	2006 604 (20% missing) 2007 918 (18% missing) 2008 1580 (23% missing)	This question has not been asked by proxy - this will be corrected for 2011.
PL060 - Number of hours per week worked in main job	2009 983 (17% missing)	This question has not been asked by proxy - this will be corrected for 2011.
PL140 - Type of contract	2006 143 (5% missing) 2007 331 (7% missing) 2008 5972 (100% missing) 2009 3937 (79% missing)	This variable was not asked in 2008, or Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy for any year.
PL160 - Change of job since last year	2006 324 (11% missing) 2008 6826 (100% missing) 2009 4636 (81% missing)	This variable was not asked in 2008, or Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy for any year.
PL170 - Reason for change	2006 496 (77% missing)	The derivation was changed in 2007 to reduce missingness.
PL180 - Most recent change in the individuals activity status	2006 59 (14% missing) 2007 109 (17% missing) 2008 170 (17% missing) 2009 116 (15% missing)	The high level of missingness is due to the way the questions were asked. These cases reported a change in 'situation' through the year, but remained in the same activity status. For 2009 the questionnaire asked respondents their status using the old method (i.e. not splitting up employed and self-employed part-time and full-time workers). We did however ask their current status using the new format. Therefore if respondents had changed their situation over the year the full data could not be derived.
PL190 - When began first regular job	2006 760 (13% missing) 2007 1180 (12% missing) 2008 13554 (100% missing) 2009 7838 (80% missing)	This variable was not asked in 2008, or Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy.
PL200 - Number of years spent in paid work	2006 796 (14% missing) 2007 1239 (13% missing) 2008 13554 (100% missing) 2009 7857 (80% missing)	This variable was not asked in 2008, or Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy.
PL210A-K - Main activity in January -Dec	2006 611 (10% missing) 2007 1022 (10% missing) 2008 1622 (12% missing) 2009 1080 (11% missing)	This question is not asked of proxy respondents.
PL211A-L - Main activity in January -Dec	2009 1069 (10% missing)	This question is not asked of proxy respondents.
PH010 - General health	2006 606 (10% missing) 2007 1025 (10% missing)	Question not asked of proxy respondents in 2006 and 2007.
PH020 - Suffer from any chronic illness or condition	2006 624 (10% missing) 2007 1020 (10% missing)	Question not asked of proxy respondents in 2006 and 2007.

## Logical Checks

Check	Issue	Explanation/Action
#123	RB210 - Age and basic activity status may be not consistent 38 cases	This check failure takes place for cases when age is equal to '15' and is due to the way the Eurostat checking program computes age by subtracting RB080 (year of birth) from RB010 (year of interview) decreased by one. If actual age is worked out by taking integer part of 'date of interview - date of birth', in that case age will be higher by '1' year than the age worked out in the checking program. Therefore we would not consider this to be a validation failure, rather a function of the way the survey is done in the UK.
#124	RB245 - Age and eligibility are not consistent 359 cases	This check failure takes place for cases when age is equal to '15' and is due to the way the Eurostat checking program computes age by subtracting RB080 (year of birth) from RB010 (year of interview) decreased by one. If actual age is worked out by taking integer part of 'date of interview - date of birth', in that case age will be higher by '1' year than the age worked out in the checking program. Therefore we would not consider this to be a validation failure, rather a function of the way the survey is done in the UK.
#143	RB220 - Father should be the same every year 20 cases	This check has resulted in 20 failures which have been checked and are due to step-parents moving into the households and this is therefore not an error in the data.
#144	RB230 - Mother should be the same every year 14 cases	This check has resulted in 14 failures which have been checked and are due to step-parents moving into the households and this is therefore not an error in the data.
#156	HB090 - Age of Person 2 responsible for the accommodation is below 16 1 case	This person has said that they are jointly responsible for the household along with person 1.
#315	RB230 - Child should be at least 15 years younger than its mother 21 cases	This check failure is not an error in the data per se, rather a result of combination of two factors not taken into account in the checking program, (a) the way EUROSTAT checking program computes age, and (b) the possibility of step-children or adopted children in the household who need not be 15 years younger than their guardian (step-mother/ step-father).
#550	HY010 - No total household income , but components with income 58 cases	This check failure seems to be a result of the method of the EUROSTAT checking program. For the UK dataset, HY010 has been calculated as the sum of PGROINC, HGROINC and PY070. HNETINC is calculated as HGROINC minus tax variables (HY120, HY130, HY140) and so respondents who do not have an income, but have paid council tax for example, are being incorrectly highlighted by the check.
#570	PY010 - 12 months active as employee, but no income as employee 500 cases	The first 5 cases have been investigated and no error has been found.
#571	PY050 - 12 months active as self-employee,	The first 5 cases have been investigated and

	but no income as self-employee 276 cases	no error has been found.
#572	PY090 - 12 months unemployed, but no income from unemployments benefits 224 cases	The first 5 cases have been investigated and no error has been found.
#573	PY100 - 12 months retired, but no income from old-age benefits 211 cases	The first 5 cases have been investigated and no error has been found.
#580	Big difference in personal income from one year to the next year 147 cases	The first 5 cases have been investigated and no error has been found.
#581	PY010G - Big difference in income from one year to the next year 72 cases	The first 5 cases have been investigated and no error has been found.
#750	PL160 = 2 but different PL050 (ISCO) 230 cases	This check has failed 230 cases. We have investigated a number of these and there seems to be 2 main reasons. Firstly, some respondents have recorded a change of job title even though their employment circumstances remain unchanged i.e. they have moved from one set of duties to another within the same employer, but may not have changed job contract. Secondly, the coding for ISCO is completed manually by the interviewer at the point of interview, based on information they have received from the respondent. Interviewers provide a code that they think best-fits the respondent in question (the interviewer does not have any record of what they coded the respondent as being last year with regards ISCO). One option to improve the way in which this categorisation is recorded for future deliveries is to rotate the information that was provided last year if PL160=2 or to provide a 'soft-check' within the CAPI instrument if the recorded ISCO is different from what was recorded the previous year. This is being investigated for 2011.